SEQUENCE LISTING

<110> Cade, Rebecca M
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Lawton, Kay Ann

<120> INDUCIBLE PROMOTERS

<130> A-31089CIP1

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<150> 60/171,008
<151> 1999-12-15

<150> 60/175,519
<151> 2000-01-11

<160> 31

<170> PatentIn Ver. 2.1

<210> 1
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<220>
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<222> (68)..(433)
<223> gene product NI16

<220>
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<223> EcoRI site

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aaaatcagca aataaacttt tcttgactaa gcttaaacga cgccgttaac attttcttct 60

ggctaac atg aac aac tct ttg aag aaa gaa gaa cgc gta gaa gaa gat 109
Met Asn Asn Ser Leu Lys Lys Glu Glu Arg Val Glu Glu Asp
1 5 10

aac gga aaa tct gac ggt aac aga ggg aaa ccg tcg acg gaa gtt gtt 157
Asn Gly Lys Ser Asp Gly Asn Arg Gly Lys Pro Ser Thr Glu Val Val
15 20 25 30

cgg acg gta acg gag gaa gag gtg gat gag ttt ttc aag ata tta cgg 205
Arg Thr Val Thr Glu Glu Glu Val Asp Glu Phe Phe Lys Ile Leu Arg
35 40 45

aga gta cac gtg gcg aca cga acg gtt gcg aaa gtt aac ggc ggt gtt 253
Arg Val His Val Ala Thr Arg Thr Val Ala Lys Val Asn Gly Gly Val
50 55 60

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gct gag gga gag tta ccg tct aag aag agg aaa cgg agt cag aat ctt   301
Ala Glu Gly Glu Leu Pro Ser Lys Lys Arg Lys Arg Ser Gln Asn Leu
         65                  70                  75

ggg ttg aga aac tcg ttg gat tgt aac ggc gtt cga gac gga gaa ttc   349
Gly Leu Arg Asn Ser Leu Asp Cys Asn Gly Val Arg Asp Gly Glu Phe
     80                  85                  90

gat gag att aat cgg gtc ggg tta cag ggt ttg ggt ttg gat ctg aac   397
Asp Glu Ile Asn Arg Val Gly Leu Gln Gly Leu Gly Leu Asp Leu Asn
 95                 100                 105                 110

tgt aaa ccg gaa cca gac agc gtt agt tta tcg ttg tagacttgta        443
Cys Lys Pro Glu Pro Asp Ser Val Ser Leu Ser Leu
                115                 120

gtccttcatg ttttttcccct tcttacaata atcaattttt ttttaactac aatacttttg 503

aaaaaa                                                           509


<210> 2
<211> 122
<212> PRT
<213> Arabidopsis thaliana

<400> 2
Met Asn Asn Ser Leu Lys Lys Glu Glu Arg Val Glu Glu Asp Asn Gly
  1               5                  10                  15

Lys Ser Asp Gly Asn Arg Gly Lys Pro Ser Thr Glu Val Val Arg Thr
            20                  25                  30

Val Thr Glu Glu Glu Val Asp Glu Phe Phe Lys Ile Leu Arg Arg Val
         35                  40                  45

His Val Ala Thr Arg Thr Val Ala Lys Val Asn Gly Gly Val Ala Glu
     50                  55                  60

Gly Glu Leu Pro Ser Lys Lys Arg Lys Arg Ser Gln Asn Leu Gly Leu
 65                  70                  75                  80

Arg Asn Ser Leu Asp Cys Asn Gly Val Arg Asp Gly Glu Phe Asp Glu
                85                  90                  95

Ile Asn Arg Val Gly Leu Gln Gly Leu Gly Leu Asp Leu Asn Cys Lys
            100                 105                 110

Pro Glu Pro Asp Ser Val Ser Leu Ser Leu
        115                 120


<210> 3
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<222> (365)..(374)
<223> TCA1 motif
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<220>
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<222> (426)..(435)
<223> TCA1 motif

<220>
<221> misc_feature
<222> (609)..(614)
<223> MYCATR22 element

<220>
<221> misc_feature
<222> (646)..(665)
<223> CAMV AS1 salicylic acid response element

<220>
<221> misc_feature
<222> (707)..(712)
<223> PAL BOX

<220>
<221> misc_feature
<222> (757)..(762)
<223> HEXAMERAT 4 element

<220>
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<222> (863)..(1228)
<223> NI16 genomic coding region

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catgacaaat attaatatat cagtgttaat aacatgtttt gttcttaaaa tacatgcatt 120
ttaaaatcag acatttgttt taaaatcaaa tctaatctct tatatcacaa cgacattgac 180
ggaaaattca ggtaaaaaga gaaaataaag aatgagagat agagagattt ctatggaaaa 240
agaaagagag aacatgtagg tgaacaaaat aaagagatat gatgatatat tttatgagag 300
gtggtgaaga ttattttagg agagggagag agaaatagaa aaagaaaatg acatggtgaa 360
tctgaagaag atgaattgtg ttaaagatga agagagaaag agaactccat ggctaaagtc 420
tcgtaaagaa gatgaaaaag aaacaaaaga aggaagaaga aagagaaagg ctaaaataga 480
ctaactattg ccaaaatttc tgtagccgac aaatactatt tggtccaagg ttattttgtg 540
tattcttttg aagtcaaaag ttatttctta catatactct aaaaatatag ccgataccaa 600
tttttccaca catggacttc ctttattcca aaagtcaata aagtgtgacg tcatgatact 660
tacgctttaa aacatcgcat gatgatgtca ttagcatcaa tctccaccgt ccaatttatt 720
tagttgttga caatatcgac cgtctaagtt ccacaccgac ggctataaga gtttcattat 780
aaattttagc aaaataaaat cagcaaataa ttttttcttg actaagctta aacgacgccg 840
ttaacatttt cttctggcta acatgaacaa ctctttgaag aaagaagaac gcgtagaaga 900
agataacgga aaatctgacg gtaacagagg gaaaccgtcg acggaagttg ttcggacggt 960
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attcgatgag attaatcggg tcgggttaca gggtttgggt ttggatctga actgtaaacc 1200
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ggcctttgcc tggcccgttt agtaatattg cagagtaggt atgggcctgt ataagggagt 1560
ccaaaaaaag agcgggcatt gcgggttggg tgcgtttgga actttggatt gtggattagt 1620
catggtttat ctattaatgt ctgcggactt gtggacgacg cgcttgttct tcttcctctg 1680
tttacgactt acgaacatat 1700

<210> 4
<211> 608
<212> DNA
<213> Solanum tuberosum

<220>
<221> CDS
<222> (124)..(438)

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tgagagaata aagagaagta attgcactag cagtattgac aattaatcag ctagccggct 120

tga atg cta ctt atg gac gga gaa aag aag agg aag aga aca gca atc 168
Met Leu Leu Met Asp Gly Glu Lys Lys Arg Lys Arg Thr Ala Ile
1 5 10 15

ggc gcc gga gat cgg agt aag gat gag gta gaa gct act gtg aag gag 216
Gly Ala Gly Asp Arg Ser Lys Asp Glu Val Glu Ala Thr Val Lys Glu
20 25 30

gag gag ccg ccg tca gag gcg gag gtt gac gag ttc ttc gcg atc tta 264
Glu Glu Pro Pro Ser Glu Ala Glu Val Asp Glu Phe Phe Ala Ile Leu
35 40 45

cgg agg atg cat gtg gcg gtg aaa tat ctc cag aga aat gct cag att 312
Arg Arg Met His Val Ala Val Lys Tyr Leu Gln Arg Asn Ala Gln Ile
50 55 60

cgg ccg gaa aac ctt aac gca tcg ccg gcc ggt gct aac ggt gtc gca 360
Arg Pro Glu Asn Leu Asn Ala Ser Pro Ala Gly Ala Asn Gly Val Ala
65 70 75

gct gga cgg aag aga gaa cgg gga atc gtg aga aaa ggt gat ttg gac 408
Ala Gly Arg Lys Arg Glu Arg Gly Ile Val Arg Lys Gly Asp Leu Asp
80 85 90 95

ctc aac act ctg ccg gac ggc gga gac taa ttaacgcagt ttaagcatag 458
Leu Asn Thr Leu Pro Asp Gly Gly Asp
100 105

gttaattaca taaatgcacc cttaattatc gtagattctt aagattgatc tgctgtacag 518

attaattaat taaagccttt ttttatatat atttctccgg taaacggttt gctctttgtg 578

attttcttta ataaatttaa tttattttat 608

<210> 5
<211> 104
<212> PRT
<213> Solanum tuberosum

<400> 5
Met Leu Leu Met Asp Gly Glu Lys Lys Arg Lys Arg Thr Ala Ile Gly
1 5 10 15
Ala Gly Asp Arg Ser Lys Asp Glu Val Glu Ala Thr Val Lys Glu Glu
20 25 30
Glu Pro Pro Ser Glu Ala Glu Val Asp Glu Phe Phe Ala Ile Leu Arg
35 40 45

```
Arg Met His Val Ala Val Lys Tyr Leu Gln Arg Asn Ala Gln Ile Arg
     50                  55                  60
Pro Glu Asn Leu Asn Ala Ser Pro Ala Gly Ala Asn Gly Val Ala Ala
 65                  70                  75                  80
Gly Arg Lys Arg Glu Arg Gly Ile Val Arg Lys Gly Asp Leu Asp Leu
                 85                  90                  95
Asn Thr Leu Pro Asp Gly Gly Asp
            100
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<210> 6
<211> 349
<212> DNA
<213> Lycopersicon esculentum

<220>
<221> CDS
<222> (3)..(233)

<400> 6

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ct tcg gag gga gag gtg gat gag ttt ttc gca att tta cgg agg atg    47
   Ser Glu Gly Glu Val Asp Glu Phe Phe Ala Ile Leu Arg Arg Met
     1               5                  10                  15

cac atg gcc gta aaa tat ctt cag aga aac gct cag att cag ccg gaa   95
His Met Ala Val Lys Tyr Leu Gln Arg Asn Ala Gln Ile Gln Pro Glu
                20                  25                  30

aac gtt aac gct cac ggc agc aag tta acc gca tcg ccg gcc ggt gtt   143
Asn Val Asn Ala His Gly Ser Lys Leu Thr Ala Ser Pro Ala Gly Val
            35                  40                  45

aac gga gat gca act gga cag aag aga gaa cgg gga atc gtg aga aaa   191
Asn Gly Asp Ala Thr Gly Gln Lys Arg Glu Arg Gly Ile Val Arg Lys
         50                  55                  60

ggt gat ttg gac ctc aac act ttg ccg gac tgc gga gac taa           233
Gly Asp Leu Asp Leu Asn Thr Leu Pro Asp Cys Gly Asp
     65                  70                  75

cgcagtttaa gcataggtta attacagaaa tgcaccttta attatcgtag attcttaaga 293

ttgatctgct gtacaaatta attaaatgaa gccttttttt atatataaaa aaaaaa     349
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<210> 7
<211> 76
<212> PRT
<213> Lycopersicon esculentum

<400> 7

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Ser Glu Gly Glu Val Asp Glu Phe Phe Ala Ile Leu Arg Arg Met His
  1               5                  10                  15
Met Ala Val Lys Tyr Leu Gln Arg Asn Ala Gln Ile Gln Pro Glu Asn
            20                  25                  30
Val Asn Ala His Gly Ser Lys Leu Thr Ala Ser Pro Ala Gly Val Asn
         35                  40                  45
Gly Asp Ala Thr Gly Gln Lys Arg Glu Arg Gly Ile Val Arg Lys Gly
     50                  55                  60
Asp Leu Asp Leu Asn Thr Leu Pro Asp Cys Gly Asp
 65                  70                  75
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<210> 8
<211> 75
<212> PRT
<213> Glycine max

<400> 8
Met Glu Val Glu Lys Arg Lys Asn Lys Arg Val Met Gly Glu Glu Glu
1 5 10 15

Glu Ser Glu Arg Val Lys Asn Lys Arg Leu Lys Gly Val Glu Glu Glu
20 25 30

Asp Gly Ser Asp Gly Val Pro Thr Glu Glu Glu Val Glu Glu Phe Phe
35 40 45

Ala Ile Leu Arg Arg Met Arg Met Ala Val Lys Tyr Phe Asp Asp Lys
50 55 60

Gly Arg Gly Gly Arg Glu Trp Arg Glu Ala Leu
65 70 75

<210> 9
<211> 90
<212> PRT
<213> Glycine max

<400> 9
Gly Gly Val Pro Thr Glu Glu Glu Val Glu Glu Phe Phe Ala Ile Leu
1 5 10 15

Arg Arg Met Arg Val Ala Val Lys Tyr Phe Asp Asp Lys Gly Ser Gly
20 25 30

Gly Lys Glu Trp Arg Lys Ala Leu Glu Thr Ala Glu Leu Thr Val Asp
35 40 45

His Arg His Asp Val Val Ala Ala Glu Glu Asp Asp Lys Pro Arg Lys
50 55 60

Lys Gly Gly Glu Val Ile Ile Asn Glu Gly Phe Asp Leu Asn Ala Val
65 70 75 80

Ala Pro Glu Ala Ala Glu Gly Gly Gly Ala
85 90

<210> 10
<211> 85
<212> PRT
<213> Nicotiana tabacum

<400> 10
Met Asp Gly Glu Lys Lys Arg Lys Arg Thr Glu Asn Gly Lys Ala Asn
1 5 10 15

Gly Gly Asp Arg Asn Arg His Glu Arg Lys Ser Ala Ala Asn Glu His
20 25 30

Thr Ala Val Ser Pro Pro Pro Ser Glu Ala Glu Val Asp Glu Phe Phe
35 40 45

Ala Ile Leu Arg Arg Met His Val Ala Val Arg Tyr Leu Gln Glu Ser
50 55 60

Gly Gln Lys Arg Val Val Pro Lys Gly Asp Leu Asp Leu Asn Thr Leu
65 70 75 80

Pro Gly Asn Gly Asp
85

<210> 11
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer NIM5'RI

<400> 11
ggaacgaatt catggacacc accattg 27

<210> 12
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer
NIM3'SalI

<400> 12
aaaaaagtcg actaagagca agagtc 26

<210> 13
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer
NIMtrunc3'NcoI

<400> 13
cgatctccat ggcagcttgt cc 22

<210> 14
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer
NIMloop5'RI

<400> 14
gaaccgaatt catgatcgca 20

<210> 15
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer 16GSP1

<400> 15
ttccggttta cagttcagat 20

<210> 16
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer GSP2

<400> 16
gacccgatta ataatctcat cg 22

<210> 17
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer GSP3

<400> 17
caccatttct ggttggaggt 20

<210> 18
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer 16F

<400> 18
acgacgccgt taacattttc 20

<210> 19
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer 16R

<400> 19
gaaggggaaa aacatgaagg a 21

<210> 20
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
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NI16-DegF

<220>
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<222> (1)..(26)
<223> n = a, t, c, or g

<400> 20
cggaggnnga ggtngaygag ttyttc 26

<210> 21
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR primer
NI16-DegR

<220>
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<222> (1)..(27)
<223> n = a, t, c, or g

<400> 21
gaaraactcr tcnacctcnn ccctccg 27

<210> 22
<211> 413
<212> DNA
<213> Arabidopsis thaliana

<220>
<221> CDS
<222> (1)..(336)
<223> NI19

<400> 22
atg gac aga gac aga aag agg gtg aaa atg gag aag gaa gat gac gaa 48
Met Asp Arg Asp Arg Lys Arg Val Lys Met Glu Lys Glu Asp Asp Glu
1 5 10 15

gaa gaa aag atg gag aag ttg tac aca gtg ctt aaa aac gca agg gaa 96
Glu Glu Lys Met Glu Lys Leu Tyr Thr Val Leu Lys Asn Ala Arg Glu
20 25 30

atg cgg aaa tat gtc aac agc tcc atg gag aag aag aga cag gaa gaa 144
Met Arg Lys Tyr Val Asn Ser Ser Met Glu Lys Lys Arg Gln Glu Glu
35 40 45

gaa gaa aga gca agg gtt cgt aga ttc cct tcg ttt cag cca gaa gat 192
Glu Glu Arg Ala Arg Val Arg Arg Phe Pro Ser Phe Gln Pro Glu Asp
50 55 60

```
ttc att ttc atg aat aaa gca gag gcc aac aac att gaa aaa gca gct      240
Phe Ile Phe Met Asn Lys Ala Glu Ala Asn Asn Ile Glu Lys Ala Ala
65                  70                  75                  80

aat gag agc tct tca gca tcc aac gag tat gat ggc tct aag gaa aag      288
Asn Glu Ser Ser Ser Ala Ser Asn Glu Tyr Asp Gly Ser Lys Glu Lys
                85                  90                  95

caa gaa gga tct gag act aac gtt tgt tta gac ttg aat ctt tct ctg      336
Gln Glu Gly Ser Glu Thr Asn Val Cys Leu Asp Leu Asn Leu Ser Leu
            100                 105                 110

tagcatacat acatacaaga gacaaagagc tcttcagttt ctgtataagc aacaaagaat    396

gttagtaact acgtacc                                                  413


<210>  23
<211>  112
<212>  PRT
<213>  Arabidopsis thaliana

<400>  23

Met Asp Arg Asp Arg Lys Arg Val Lys Met Glu Lys Glu Asp Asp Glu
1               5                   10                  15

Glu Glu Lys Met Glu Lys Leu Tyr Thr Val Leu Lys Asn Ala Arg Glu
            20                  25                  30

Met Arg Lys Tyr Val Asn Ser Ser Met Glu Lys Lys Arg Gln Glu Glu
        35                  40                  45

Glu Glu Arg Ala Arg Val Arg Arg Phe Pro Ser Phe Gln Pro Glu Asp
    50                  55                  60

Phe Ile Phe Met Asn Lys Ala Glu Ala Asn Asn Ile Glu Lys Ala Ala
65                  70                  75                  80

Asn Glu Ser Ser Ser Ala Ser Asn Glu Tyr Asp Gly Ser Lys Glu Lys
                85                  90                  95

Gln Glu Gly Ser Glu Thr Asn Val Cys Leu Asp Leu Asn Leu Ser Leu
            100                 105                 110


<210>  24
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<212>  DNA
<213>  Arabidopsis thaliana

<400>  24

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cgaagtttaa aaaaacatat agaattgtta caatattaca tgggttttta ttggataaca    120

tgacaaatat ttatttattt catgagtttt tattggatag catgacaaat attaatatat    180

cagtgttaat aacatgtttt gttcttaaaa tacatgcatt ttaaaatcag acatttgttt    240
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taaaatcaaa tctaatctct tatatcacaa cgacattgac ggaaaattca ggtaaaaaga 300

gaaaataaag aatgagagat agagagattt ctatggaaaa agaaagagag aacatgtagg 360

tgaacaaaat aaagagatat gatgatatat tttatgagag gtggtgaaga ttattttagg 420

agagggagag agaaatagaa aaagaaaatg acatggtgaa tctgaagaag atgaattgtg 480

ttaaagatga agagagaaag agaactccat ggctaaagtc tcgtaaagaa gatgaaaaag 540

aaacaaaaga aggaagaaga aagagaaagg ctaaaataga ctaactattg ccaaaatttc 600

tgtagccgac aaatactatt tggtccaagg ttattttgtg tattcttttg aagtcaaaag 660

ttatttctta catatactct aaaaatatag ccgataccaa tttttccaca catggacttc 720

ctttattcca aaagtcaata aagtgtgacg tcatgatact tacgctttaa aacatcgcat 780

gatgatgtca ttagcatcaa tctccaccgt ccaatttatt tagttgttga caatatcgac 840

cgtctaagtt ccacaccgac ggctataaga gtttcattat aaattttagc aaaataaaat 900

cagcaaataa ttttttcttg actaagctta aacgacgccg ttaacatttt cttctggcta 960

ac 962

<210> 25
<211> 862
<212> DNA
<213> Arabidopsis thaliana

<400> 25

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catgacaaat attaatatat cagtgttaat aacatgtttt gttcttaaaa tacatgcatt 120

ttaaaatcag acatttgttt taaaatcaaa tctaatctct tatatcacaa cgacattgac 180

ggaaaattca ggtaaaaaga gaaaataaag aatgagagat agagagattt ctatggaaaa 240

agaaagagag aacatgtagg tgaacaaaat aaagagatat gatgatatat tttatgagag 300

gtggtgaaga ttattttagg agagggagag agaaatagaa aaagaaaatg acatggtgaa 360

tctgaagaag atgaattgtg ttaaagatga agagagaaag agaactccat ggctaaagtc 420

tcgtaaagaa gatgaaaaag aaacaaaaga aggaagaaga aagagaaagg ctaaaataga 480

ctaactattg ccaaaatttc tgtagccgac aaatactatt tggtccaagg ttattttgtg 540

tattcttttg aagtcaaaag ttatttctta catatactct aaaaatatag ccgataccaa 600

tttttccaca catggacttc ctttattcca aaagtcaata aagtgtgacg tcatgatact 660

tacgctttaa aacatcgcat gatgatgtca ttagcatcaa tctccaccgt ccaatttatt 720

tagttgttga caatatcgac cgtctaagtt ccacaccgac ggctataaga gtttcattat 780

aaattttagc aaaataaaat cagcaaataa ttttttcttg actaagctta aacgacgccg 840

ttaacatttt cttctggcta ac 862

<210> 26
<211> 274
<212> DNA
<213> Arabidopsis thaliana

<400> 26

tctaaaaata tagccgatac caatttttcc acacatggac ttcctttatt ccaaaagtca 60

ataaagtgtg acgtcatgat acttacgctt taaaacatcg catgatgatg tcattagcat 120

caatctccac cgtccaattt atttagttgt tgacaatatc gaccgtctaa gttccacacc 180

gacggctata agagtttcat tataaatttt agcaaaataa aatcagcaaa taatttttc 240

ttgactaagc ttaaacgacg ccgttaacat tttc 274

<210> 27
<211> 544
<212> DNA
<213> Arabidopsis thaliana

<400> 27

agattatttt aggagaggga gagagaaata gaaaaagaaa atgacatggt gaatctgaag 60

aagatgaatt gtgttaaaga tgaagagaga aagagaactc catggctaaa gtctcgtaaa 120

gaagatgaaa aagaaacaaa agaaggaaga agaaagagaa aggctaaaat agactaacta 180

ttgccaaaat ttctgtagcc gacaaatact atttggtcca aggttatttt gtgtattctt 240

ttgaagtcaa aagttatttc ttacatatac tctaaaaata tagccgatac caatttttcc 300

acacatggac ttcctttatt ccaaaagtca ataaagtgtg acgtcatgat acttacgctt 360

taaaacatcg catgatgatg tcattagcat caatctccac cgtccaattt atttagttgt 420

tgacaatatc gaccgtctaa gttccacacc gacggctata agagtttcat tataaatttt 480

agcaaaataa aatcagcaaa taatttttc ttgactaagc ttaaacgacg ccgttaacat 540

tttc 544

<210> 28
<211> 274
<212> DNA
<213> Arabidopsis thaliana

<400> 28

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ataaagtgtg acgtcatgat acttacgctt taaaacatcg catgatgatg tcattagcat 120

caatctccac cgtccaattt atttagttgt tgacaatatc gaccgtctaa gttccacacc 180

gacggctata agagtttcat tataaatttt agcaaaataa aatcagcaaa taatttttc 240

ttgactaagc ttaaacgacg ccgttaacat tttc 274

<210> 29
<211> 2001
<212> DNA
<213> Artificial

<220>
<223> GUS reporter gene with an intron

<400> 29

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ttcagtctgg atcgcgaaaa ctgtggaatt gatcagcgtt ggtgggaaag cgcgttacaa 120

gaaagccggg caattgctgt gccaggcagt tttaacgatc agttcgccga tgcagatatt 180

cgtaattatg cgggcaacgt ctggtatcag cgcgaagtct ttataccgaa aggttgggca 240

ggccagcgta tcgtgctgcg tttcgatgcg gtcactcatt acggcaaagt gtgggtcaat 300

aatcaggaag tgatggagca tcagggcggc tatacgccat ttgaagccga tgtcacgccg 360

tatgttattg ccgggaaaag tgtacgtaag tttctgcttc tacctttgat atatatataa 420

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